

CLAIMS

We claim:

1. A guar gum powder product of the process comprising:
  - (a) hydrating guar gum splits;
  - (b) processing the hydrated splits, said processing step including the substeps, in either order, of flaking the splits and extruding the splits;
  - (c) grinding said processed splits into a powder; and
  - (d) drying the powder.
2. The guar gum powder product of claim 1, in which the guar gum splits comprise polygalactomannan.
3. The guar gum powder product of claim 1, in which the guar gum splits have been chemically modified.
4. The guar gum powder product of claim 1, in which the guar gum splits have been genetically modified.
5. The guar gum powder product of claim 1, in which the extruding substep in step (b) encourages said powder product to hydrate faster.
6. The guar gum powder product of claim 1, in which the extruding substep in step (b) encourages said powder product to hydrate at a faster rate of acceleration.
7. The guar gum powder product of claim 1, in which the extruding substep in step (b) encourages said powder product to hydrate faster and with a faster hydration acceleration rate.

8. The guar gum powder product of claim 1, in which the extruding substep in step (b) causes said powder product to hydrate at a rate that is affected less by lower temperatures.

9. The guar gum powder product of claim 1, in which the extruding substep in step (b) causes said powder product to hydrate at a rate of acceleration that is affected less by lower temperatures.

10. The guar gum powder product of claim 1, in which the extruding substep in step (b) causes said powder product to (1) hydrate at a rate of acceleration that is affected less by lower temperatures, and (2) hydrate at a rate of acceleration that is affected less by lower temperatures.

11. The guar gum powder product of claim 1, in which said powder product achieves about 90% hydration after about 5 minutes at about 70 degrees F.

12. The guar gum powder product of claim 1, in which said powder product achieves about 90% hydration after about 5 minutes at about 40 degrees F.

13. The guar gum powder product of claim 1, in which said powder product achieves about 50% hydration after about 60 seconds at about 70 degrees F.

14. The guar gum powder product of claim 1, in which said powder product achieves about 50% hydration after about 90 seconds at about 40 degrees F.

15. The guar gum powder product of claim 1, in which said powder product achieves about 90% hydration after about 5 minutes at about 70 degrees F and after about 5 minutes at about 40 degrees F, and in which said powder product further achieves about 50% hydration after about 60 seconds at about 70 degrees F and after about 90 seconds at about 40 degrees F.

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16. The guar gum powder product of claim 1, in which:  
the splits are hydrated in step (a) to about a 20% - 80% moisture content at about 80 - 200 degrees F;  
the hydrated splits are extruded in step (b) through about a 2" - 8" diameter barrel;  
and  
the powder is first dried in step (d) to about a 1% - 10% moisture content and then screened through about a 100 mesh sieve.

17. The guar gum powder product of claim 15, in which:  
the splits are hydrated in step (a) to about a 20% - 80% moisture content at about 80 - 200 degrees F;  
the hydrated splits are extruded in step (b) through about a 2" - 8" diameter barrel;  
and  
the powder is first dried in step (d) to about a 1% - 10% moisture content and then screened through about a 100 mesh sieve.

18. The guar gum powder product of claim 1, in which said powder product is an agent in a host product selected from the group consisting of:

- (a) drilling fluid;
- (b) fracturing fluid;
- (c) animal litter;
- (d) explosive;
- (e) foodstuff;
- (f) paperstock;
- (g) floor covering;
- (h) synthetic fuel briquettes;
- (i) water thickener for firefighting;
- (j) shampoo;
- (k) personal care lotion;
- (l) household cleaner;

- (m) catalytic converter catalyst;
- (n) electroplating solution;
- (o) diapers;
- (p) sanitary towels;
- (q) super-adsorbent in food packaging;
- (r) sticking plasters for skin abrasions;
- (s) water-adsorbing bandages;
- (t) foliar spray for plants;
- (u) suspension for spraying plant seeds;
- (v) suspension for spraying plant nutrients;
- (w) flotation aid; and
- (x) flocculent.

19. A guar gum powder product of the process comprising:

- (a) hydrating guar gum splits;
- (b) flaking the splits;
- (c) extruding the splits;
- (d) grinding said processed splits into a powder; and
- (e) drying the powder.

20. The guar gum powder product of claim 19, in which said powder product is an agent in a host product selected from the group consisting of:

- (a) drilling fluid;
- (b) fracturing fluid;
- (c) animal litter;
- (d) explosive;
- (e) foodstuff;
- (f) paperstock;
- (g) floor covering;
- (h) synthetic fuel briquettes;
- (i) water thickener for firefighting;
- (j) shampoo;
- (k) personal care lotion;
- (l) household cleaner;
- (m) catalytic converter catalyst;
- (n) electroplating solution;
- (o) diapers;
- (p) sanitary towels;
- (q) super-adsorbent in food packaging;
- (r) sticking plasters for skin abrasions;
- (s) water-adsorbing bandages;
- (t) foliar spray for plants;
- (u) suspension for spraying plant seeds;
- (v) suspension for spraying plant nutrients;

- (w) flotation aid; and
- (x) flocculent.

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21. The guar gum powder product of the process comprising:

(a) hydrating guar gum splits to about a 20% - 80% moisture content at about 80 - 200 degrees F;

(b) flaking the splits;

(c) extruding the splits through about a 2" - 8" diameter barrel;

(d) grinding the splits into a powder; and

(e) drying the powder to about a 1% - 10% moisture content.

22. The guar gum product of claim 21, in which said powder product is screened through about a 100 mesh sieve.

23. An improved guar gum powder product formed by a method including the steps of hydrating guar gum splits, processing the hydrated splits, grinding the processed splits into a powder, and then drying the powder, wherein said processing step includes the substep of flaking the splits, the improvement comprising:

also extruding the splits in said processing step.

24. The improved guar gum powder product of claim 23, in which the guar gum splits comprise polygalactomannan.

25. The improved guar gum powder product of claim 23, in which the guar gum splits have been chemically modified.

26. The improved guar gum powder product of claim 23, in which the guar gum splits have been genetically modified.